

SECTION 08100

STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Non-rated fire-rated thermally insulated and acoustic steel doors, panels and frames.
- B. Glazing frames inserted in the doors.

1.02 RELATED SECTIONS

- A. Section 04340 - Reinforced Unit Masonry: Masonry mortar or grout fill for metal frames.
- B. Section 08200 - Wood Doors and Frames.
- C. Section 08410 - Aluminum Entrances and Storefronts.
- D. Section 08700 - Finish Hardware.
- E. Section 08850 - Glass and Glazing: Glass for doors and frames.
- F. Section 09900 - Painting: Field painting of doors.

1.03 REFERENCES

- A. California Code of Regulations, Title 24, Standards of accessibility.
- B. ANSI/SDI-100, 1991 - Standard Steel Doors and Frames.
- C. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- D. ASTM A167 - Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- E. ASTM C236 - Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot-Box.
- F. ASTM E413 - Classification for Determination of Sound Transmission Class.
- G. Door Hardware Institute (DHI) - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- H. Uniform Building Code Standard 43-2 based on UL 10B.

I. UL 10B - Fire Tests of Door Assemblies.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, cut-outs for glazing frames, and finish.
- B. Product Data: Indicate door configurations, location of cut-outs for hardware reinforcement.
- C. Manufacturer's Installation Instructions: Indicate special installation instructions.
- D. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of ANSI/SDI-100.
- B. All steel doors and frames shall be the product of one manufacturer.

1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Provide packaging such as cardboard or other containers, separators, banding, spreaders, and paper wrappings to protect steel doors and frames.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage. Check against schedule and submittal to verify sizes, swings, hardware preparation and finishes including galvanizing. Store under cover except for exterior frames, which may be stored outside.
- C. Break package seals on-site to permit ventilation.

1.08 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.09 COORDINATION

- A. Coordinate the work with door opening construction, door frame and door hardware installation.

PART 2 - PRODUCTS

2.01 DOOR MANUFACTURERS

- A. Member of SDI able to supply all types of doors and frames scheduled.

2.02 DOORS AND PANELS

- A. MODEL - panel ratings
1. Standard duty (20 gauge)
 - a. Full flush face
 - b. Seamless edge
 2. Heavy duty (18 gauge)
 - a. flush face
 - b. Seamless edge
- B. Exterior Doors (Non-thermally Broken): SDI-100 Grade III, Seamless, Model 2.
- C. Interior Doors: SDI-100 Grade II, Seamless, Model 2.

2.03 DOOR CONSTRUCTION

- A. Face: Steel sheet in accordance with ANSI/SDI-100.
- B. Core: Cardboard honeycomb, polyurethane, polystyrene foam, mineral fiberboard, steel channel grid, or vertical steel stiffeners as standard with the manufacturer to meet SDI 100.
- C. Beveled edges at lock and hinge jamb.
- D. Provision for future door closures: Provide reinforcement for closures in all doors, whether or not closures are listed in Section 08700.
- E. Thermal Insulated Door: Total insulation R value of 7.0 minimum, measured in accordance with ASTM C236.
- F. Sound Rated Door: STC of 42, measured in accordance with ASTM E413.

2.04 DOOR LIGHTS

- A. Anemostat, UL listed, 18 gauge cold rolled steel, painted, mitered corners, countersunk through bolts with blank head on exterior of door. Frame profile to be 1-1/4" face flush with door face with square corners and no bevel.
- B. Glass to be insulated Solar Bronze safety glass as scheduled. Dimensioned opening is to be final exposed glazed panel.

2.06 FRAMES

- A. Type and design: Welded unit type in the sizes shown on the Drawings, labeled or non-labeled as indicated on the Door Schedule in the Drawings, in Grade II, 16 gauge, for interior and Grade III, 14 gauge for exterior doors, and properly reinforced for the finish hardware.
- B. Type and design: Knock down type in the sizes shown on the Drawings, labeled or non-labeled as indicated on the Door Schedule in the Drawings, in Grade II for interior and properly reinforced for the finish hardware. Knock-down type to be used on interior retrofit doors only.
- C. Jamb Anchors: Special type where detailed, standard type elsewhere. Not less than four anchors per jamb.

2.07 FABRICATION, GENERAL

- A. Secure templates from the finish hardware supplier and accurately install, or make provisions for, all finish hardware at the factory.
- B. Provision for future door closures: Provide reinforcement for closures in all doors and frames, whether or not closures are listed in Section 08700.

2.08 DOOR FABRICATION

- A. Astragals for Double Doors: doors to have steel Z shaped astragal, specifically for double doors.
- B. Fabricate doors with hardware reinforcement welded in place.
- C. Close top and bottom edge of exterior doors with inverted steel channel closure. Seal joints watertight.
- D. Close top of interior doors.
- E. Configure exterior doors with special profile to receive recessed weatherstripping.

2.09 FRAME FABRICATION

- A. General: All metal frames shall be accurately fabricated to match the doors to be installed in them and to the wall into which they are installed.

2.10 FINISH

- A. Steel Sheet: Galvanized to ASTM A525 G60.
- B. Primer: Pre-clean and shop prime all steel doors and frames for finish

painting which will be performed at the job site under Section 09900 of these Specifications. Exterior steel doors and frames shall be hot-dipped galvanized to ASTM A 525, G60, chemically treated for paint adhesion, and shop primed.

- C. Factory Finish: Baked enamel, Thermosetting epoxy of color as selected.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that opening sizes and tolerances are acceptable.

3.02 DOOR INSTALLATION

- A. Install doors in accordance with ANSI/SDI-100 and DHI.
- B. Coordinate installation of glass and glazing.
- C. Install door louvers, plumb and level.
- D. Coordinate installation of doors and frames with installation of hardware specified in Section 08700.
- E. Touch-up factory finished doors and primer on all doors.

3.03 FRAME INSTALLATION

- A. Assure that frame openings correspond to dimensions of frame furnished.
- B. Check that surfaces to contact frame are free of debris.
- C. Do not proceed with installation until unsatisfactory conditions are corrected.
- D. Hold head level and maintain jambs plumb and square.
- E. Leave frame spreader bars intact until frames are set perfectly square and plumb, and anchors are securely attached.

3.04 HARDWARE INSTALLATION

- A. Apply hardware in accordance with hardware manufacturer's templates and instructions.
- B. Adjust operable parts for correct function.
- C. Remove hardware, with the exception of prime-coated items; tag, box, and reinstall after finish paint work is completed.

3.05 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion (out of square): 1/16 inch measured with straight edge, corner to corner of each door or window opening.
- B. Maximum out of plane: 1/16 inch measured with a straight edge from corner to corner of each door or window opening.
- C. Minimize twist of door frame members to provide uniform margin all around door to allow hanging without springing hinges or loading the latch bolt.

3.06 ADJUSTING

- A. Adjust door for smooth and balanced door movement.
- B. Immediately after erection, areas where prime coat has been damaged, sand smooth and touch up with same primer as applied at shop. Feather edge all nicks and scratches.
- C. Remove rust before the above specified touch-up is applied.

END OF SECTION

SECTION 08200

WOOD DOORS

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 08100 - Steel Doors and Frames:
- B. Section 08700 - Finish Hardware:
- C. Section 09900 - Painting:

1.02 QUALITY ASSURANCE

- A. Qualifications of installer : Use only skilled journeymen carpenters who are completely familiar with the requirements of this Work.
- B. Codes and Standards: In addition to complying with all pertinent codes and regulations, comply with the pertinent portions of "Manual of Millwork" of the Woodwork Institute of California for the grades specified.

1.03 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect wood doors and frames before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.
- C. Shop Drawings: Submit shop drawings of the doors and frames, showing construction, joining, anchorages, block outs and back up for hardware, to the Architect for review. Indicate which types and sizes of doors and frames are to go in which locations keyed to the Architect's door schedule.

PART 2- PRODUCTS

2.01 GENERAL

- A. Size, type, core, fire rating, sound rating, finish, thickness and face material as noted on the Drawings. Comply with W.I.C. "Custom" Grade, except labeled doors W.I.C. "Premium" Grade.

2.02 SOLID CORE DOORS

- A. 1-3/4" thick stave lumber core. Mineral core for 60 to 90 minute rated doors. Comply with commercial standard LS-236. Use CS Type II glue for bonding core and Type 1 - fully waterproof for all other work on door.
- B. Top and edge bands shall be solid with face veneer to match door face. Door face for painted doors shall be medium density overlay. Face to be vertical grain oak for stain grade as indicated on schedule.

2.03 HOLLOW CORE DOORS

- A. Cellular core include lock blocks along with top and bottom rails. Use CS35 Type II glue for bonding core and Type I for all other work.
- B. Top and edge bands shall be solid with face veneer to match door face. Door face for painted doors shall be medium density overlay. Face to be vertical grain oak for stain grade as indicated on schedule.

2.04 DOOR FRAMES

- A. All jambs shall be hard wood. Paint grade where indicated on schedule and door-matched grain for transparent finish.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to installation of wood doors, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. Verify that doors may be installed in accordance with the original design, the referenced standard, and all the pertinent codes and regulations.
- C. Base all final measurements on the field conditions at the time of installation.

3.02 INSTALLATION

- A. Performance:
 - 1. Install all doors in strict accordance with all pertinent codes and regulations, the original design, and the referenced standards, hanging square, plumb and straight and firmly anchored into position for long life under hard use.
 - 2. Install all finish hardware in strict accordance with the

manufacturer's recommendations, eliminating all hinge-bound conditions and making all items smoothly operating and firmly anchored into position.

- B. Finish Hardware : Install accurately and securely without marking or defacing hardware or finish work. Test to assure correct alignment and operation. Fasten finish hardware at all points where indicated or required. Protect finish hardware with suitable coverings until completion of building. Leave all hardware in perfect working order. Clean and polish.
- C. Break all exposed edges and sand smooth. Jointer or planer waves are to be completely removed.

3.03 TOUCHING UP

- A. Using fine-graded sandpaper, completely eliminate all scratches and abrasions in finished wood surfaces.
- B. Set all nails and fasteners for putty; firmly putty all holes; leave all finished wood surfaces ready for painting.

END OF SECTION

SECTION 08305

ACCESS DOORS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Mechanical and electrical access panels.
- B. Wall and ceiling locations.

1.02 RELATED SECTIONS

- A. Section 03100 - Concrete Formwork: Openings in concrete.
- B. Section 04340 - Reinforced Unit Masonry: Openings in masonry.
- C. Section 06100 - Rough Carpentry: Openings in wood partitions.
- D. Section 09110 - Metal Stud Framing: Openings in metal stud partitions and ceilings.
- E. Section 09510 - Acoustical Ceilings: Openings in suspended acoustical ceilings.
- F. Section 09900 - Painting: Field paint finish.
- G. Various Sections: Components requiring access.
- H. Division 15: Mechanical components requiring access.
- I. Section 15910 - Ductwork Accessories: Access doors in ductwork.
- J. Division 16: Electrical components requiring access.

1.03 DESIGN REQUIREMENTS

- A. Wall and ceiling access doors are to match the fire rating of the wall or ceiling into which they are installed.
- B. Frame openings to accommodate gypsum wallboard at perimeter as required for fire rating.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate exact position of all access units to the Contractor for coordination between trades.
- B. Product Data: Provide sizes, types, finishes, scheduled locations, and

details of adjoining work.

- C. Samples: Submit 1 access unit, illustrating frame configuration, anchors and finish.
- D. Manufacturer's Installation Instructions: Indicate installation requirements, rough-in dimensions and any adjacent construction requirements to comply with fire rating restrictions.

1.05 PROJECT RECORD DOCUMENTS

- A. Record actual locations of all access units.

1.06 FIELD MEASUREMENTS

- A. Verify that field measurements are as instructed by the manufacturer.

1.07 COORDINATION

- A. Coordinate the work with mechanical, electrical and other trades requiring access units.

PART 2 - PRODUCTS

2.01 MANUFACTURERS - WALL AND CEILING UNITS

- A. Karp Associates Incorporated, 800-888-4212. Product numbers listed below are from the Karp catalog. Equal products from Milcor 419-227-6899 and Cesco Products 612-424-4919 will be acceptable.
- B. Products by other manufacturer's will be reviewed as substitutions.

2.02 ACCESS UNITS - WALLS

- A. Non-Fire Rated Door and Frame Unit for painted or vinyl covered walls: Formed steel, prime coat, 16 gauge door, 14 gauge frame, continuous concealed piano hinge, screwdriver latch flush with face of door:
 - 1. In Cast-in-Place Concrete: Model DSC-214M.
 - 2. In Masonry: Model DSC-214M.
 - 3. In Gypsum Board on Wood or Steel Studs: Model KDW.
- B. Non-Fire Rated Door and Frame Unit for tile walls: Stainless steel, #4 finish, 16 gauge door, 14 gauge frame, continuous concealed piano hinge, screwdriver latch flush with face of door:
 - 1. In Cast-in-Place Concrete: Model DSC-214M stainless steel.
 - 2. In Masonry: Model DSC-214M stainless steel.
 - 3. In Gypsum Board on Wood or Steel Studs: Model DSC-214M stainless steel.
- C. Fire Rated Door and Frame Unit for painted or vinyl covered walls:

Formed steel, prime coat, 20 gauge welded pan door, 16 gauge frame, continuous piano hinge, bolt type latch with flush keyway. Self closing and latching with interior latch release.

1. Concrete: Model KRP-150FR. UL #R-10806.
2. In Masonry: Model KRP-150FR. UL #R-10806.
3. In Gypsum Board on Steel Studs: Model KRP-150FR. UL #R-10806.

- D. Fire Rated Door and Frame Unit for tile walls: Stainless steel, #4 finish, 20 gauge welded pan door, 16 gauge frame, continuous piano hinge, bolt type latch with flush keyway. Self closing and latching with interior latch release.

1. Concrete: Model KRP-150FR, stainless steel. UL #R-10806.
2. In Masonry: Model KRP-150FR, stainless steel. UL #R-10806.
3. In Gypsum Board on Wood or Steel Studs: Model KRP-150FR, stainless steel. UL #R-10806.

2.03 ACCESS UNITS - CEILINGS

- A. Non-Fire Rated Door and Frame Unit: Formed steel, prime coat, 20 gauge door and frame, concealed hinge, polyurethane gasketing, concealed locking device, controlled action device to retard opening:

1. Gypsum Wall Board on Wood or Metal Furring: Model KSTDW/CAD.
2. In Metal T-Bar Suspension Ceiling: Model KSTE/CAD.
3. Heavy duty for gypsum wallboard or acoustical tile: Model DSC-210, 16 gauge door in 13 gauge frame. Exposed edges painted white.

- B. Fire Rated Door and Frame Unit for painted ceilings: Formed steel, prime coat, 20 gauge welded pan door, 16 gauge frame, continuous piano hinge, bolt type latch with flush keyway. Self closing and latching with interior latch release.

1. In Gypsum Board on Wood or Metal Furring: Model KRP-150FR. UL #R-10806.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings for door and frame are correctly sized and located.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in opening. Secure rigidly in place.
- C. Position unit to provide convenient access to concealed work requiring access.
- D. If directed by the Architect or Inspector install sealant at the

perimeter of the door frame to obtain an acceptable joint.

3.03 SCHEDULE

- A. Corridor Ceilings: Gypsum board finish type, 24 x 24 inch size, screwdriver slot lock, primed and one coat baked enamel "White".
- B. Washroom Walls Above Urinal Valves: Ceramic tile finish type, 12 x 12 inch size, cylinder lock, primed and two coat baked enamel to match ceramic tile color.

END OF SECTION

SECTION 08410

ALUMINUM ENTRANCES/STOREFRONTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Aluminum doors, frames and glazed lights.
- B. Glass and infill panels.
- C. Anchors, brackets and attachments.
- D. Door hardware.
- E. Perimeter sealant.

1.02 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 08700 - Hardware: Door hardware items other than specified in this Section.
- B. Section 08850 - Glass and Glazing: Insulated glazing panels.

1.03 RELATED SECTIONS

- A. Section 09110 - Metal Stud Framing: Preparation of adjacent work to receive work of this Section.
- B. Section 04340 - Concrete Block Masonry: Adjacent work to receive work of this section.
- C. Section 05100 - Structural Steel: Adjacent work to receive work of this section.

1.04 REFERENCES

- A. ANSI/ASTM A36 - Structural Steel.
- B. ANSI/ASTM A386 - Zinc Coating (Hot-Dip) on Assembled Steel Products.
- C. ANSI/ASTM B221 - Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.
- D. ANSI/ASTM E283 - Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
- E. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

- F. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- G. FS TT-P-31-Paint, Oil: Iron Oxide, Ready Mixed, Red and Brown.
- H. FS TT-P-641 - Primer Coating; Zinc Dust-Zinc Oxide (for Galvanized Surfaces).

1.05 PERFORMANCE

- A. System to provide for expansion and contraction within system components caused by a cycling temperature range of 170 F degrees without causing detrimental effects to system or components.
- B. Design and size members to withstand dead loads and live loads caused by pressure and suction of wind to a design pressure of 20 lb/sq ft and a suction of 20 lb/sq ft as measured in accordance with ANSI/ASTM E330.
- C. Limit mullion deflection to 1/200, or flexure limit of glass with full recovery of glazing materials, whichever is less.
- D. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior.
- E. Limit air infiltration through assembly to 0.06 cu ft/min/sq ft of assembly surface area, measured at a reference differential pressure across assembly of 0.3 inches water gage, as measured in accordance with ANSI/ASTM E283.
- F. System to accommodate, without damage to system or components, or deterioration of perimeter seal: Movement within system; movement between system and perimeter framing components; dynamic loading and release of loads; and deflection of structural support framing.

1.06 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01000.
- B. Include system and component dimensions; components within assembly; framed opening requirements and tolerances; anchorage and fasteners; glass and infill; door hardware requirements; and affected related work.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and handle system components under provisions of Section 01000.

- B. Store and protect system components.
- C. Provide wrapping or strippable coating to protect prefinished aluminum surfaces.

1.08 WARRANTY

- A. Provide five year manufacturer's warranty.
- B. Warranty: Cover complete system for failure to meet specified requirements.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Kawneer Frame style - Trifab 450; Door style - 350.
- B. Substitutions: Under provisions of Section 01600 and General Conditions.

2.02 MATERIALS

- A. Extruded Aluminum: ANSI/ASTM B221; G.S. 10A alloy, T5 temper.
- B. Steel Sections: ANSI/ASTM A36; shapes to suit mullion sections.
- C. Primer: FS TT-P-31; red, brown, for shop application and field touch-up.
- D. Fasteners: Stainless steel or galvanized steel to ASTM A 164.

2.03 FABRICATED COMPONENTS

- A. Frames: 1-3/4 x 4-1/2 inch profile, flush applied glazing stops.
- B. Doors: 1-3/4 inches thick, 3-1/2 inch wide top rail, 3-1/2 inch wide vertical stiles, 10 inch wide bottom rail; beveled glazing stops.
- C. Reinforced Mullion: 1-3/4 x 4-1/2 inch profile of extruded aluminum cladding with internal reinforcement of steel shaped structural section.
- D. Infill Panels: 1 inch thick; faced each side with aluminum sheet panels; 0.063 inches thick; with grade I anodized aluminum finish; rigid polyurethane. Aluminum to be backed with 3/16 inch thick asbestos free mineral fiber board.

2.04 GLASS AND GLAZING MATERIALS

- A. Glass and Glazing Materials: As specified in Section 08850.

- B. Glass in Exterior Lights: 15/16" insulated solar bronze tempered safety glass.
- C. Glass in Doors: and Adjacent Lights: 15/16" insulated solar bronze tempered safety glass.

2.05 HARDWARE

- A. Weather-stripping: Sealair polymeric weathering system or approved equal from door manufacturer.
- B. Sill Sweep Strips: EPDM blade gasket sweep strip.
- C. Threshold: Extruded aluminum, one piece per door opening, ribbed non-slip surface. ½" ADA compliant threshold width to match frame.
- D. Hinges: Center Offset butt type by door manufacturer.
- E. Push/Pull: 1746 style by door manufacturer.
- F. Panic Device: Paneline II concealed rod exit device with Panic Guard astragal at double doors.
- G. Closer: LCN 2030 concealed overhead closure installed by door supplier.
- H. Auto flush bolt: FB6W from Glynn Johnson or approved equal. Installed by door manufacturer.
- I. Cylinder Lock: Keyed lock: Coordinate with hardware supplier to match keying system with existing. Installed by door manufacturer.

2.06 FABRICATION

- A. Fabricate doors and frames allowing for minimum clearances and shim spacing around perimeter of assembly, yet enabling installation.
- B. Rigidly fit and secure joints and corners with internal reinforcement. Make joints and connections flush, hairline, and weatherproof.
- C. Develop drainage holes with moisture pattern to exterior.
- D. Prepare components to receive anchor devices. Fabricate anchorage items.
- E. Arrange fasteners, attachments, and jointing to ensure concealment from view.

- F. Prepare components with internal reinforcement for door hardware.

2.07 FINISHES

- A. Exterior Extruded Aluminum Surfaces: Class I anodized, coating thickness 0.7 mil or greater. Color: Dark bronze anodized.
- B. Interior Exposed Aluminum Surfaces: Class II anodized, coating thickness 0.4 mil or greater. Color: dark bronze anodized.
- C. Concealed Steel Items: Galvanized in accordance with ANSI/ASTM A386 to 2.0 oz/sq ft for exterior systems, then primed. Primed with iron oxide paint for interior systems.
- D. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Install doors, frames, glazing and hardware in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely attach frame assembly to structure.
- C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- D. Coordinate attachment and seal of air and vapor barrier materials. Install flashings.
- E. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- F. Install hardware using templates provided. Refer to Section 08700 for installation requirements.
- G. Install glass and infill panels in accordance with Section 08850, using exterior dry method of glazing.
- H. Install perimeter sealant, backing materials, and installation requirements in accordance with Section 07900. Mask off adjacent

materials so that sealant is only in the joint.

I. Adjust operating hardware.

3.03 TOLERANCES

A. Variation from Plane: 0.03 inches per foot maximum or 0.25 inches per 30 feet, whichever is less.

B. Misalignment of Two Adjoining Members Abutting in Plane: 0.015 inches.

3.04 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION

SECTION 08700

FINISH HARDWARE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. All other hardware required for proper operation, fastening and locking of movable parts shown on drawings, whether or not listed in hardware schedule.
- B. Contractor shall retain a certified hardware consultant acceptable to the Architect for the purpose of coordinating all hardware, door, frame and functional requirements.
 - 1. Duties include coordinating strikes, bolt extensions, mountings, handing, and swings.
 - 2. Duties include coordinating electrical supply and requirements of hardware, junction box locations, conduit terminal locations and pigtail lengths.
- C. Contractor's hardware consultant shall prepare submittal as described in paragraph 1.03 after coordination has been accomplished.

1.02 RELATED SECTIONS

- A. Section 06400 - Architectural Woodwork:
- B. Section 08410 - Aluminum Entrances and Storefronts: Door hardware installed by door manufacturer.
- C. Section 10160 - Toilet Partitions: Toilet partition hardware.
- D. Section 10800 - Toilet and Bath Accessories:
- E. Section 12300/2 - Casework: Cabinet hardware.

1.03 SUBMITTALS

- A. Hardware schedule:
 - 1. Within 30 days after award of the contract, prepare and submit in approved form, a complete and detailed list of all Finish Hardware necessary to complete the contract.
 - 2. Submit two preliminary, and not less than six final copies of the hardware list for review by Architect. Designate on the list in complete detail all items of hardware furnished for each opening or place of installation. Include quantities, manufacturer's catalog number or type designation, size and finish. Identify manufacturer of each item by inclusion of the same symbol as used in the Schedule of Hardware Sets. Reference all openings to the Architect's door schedule.

3. Submittal is to include a catalog cut of each piece of hardware referenced to the Architects hardware list and the hardware schedule.
4. Approval of Schedule does not relieve Contractor of responsibility of furnishing all necessary hardware.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Each item of hardware and each lockset shall be separately packaged, complete with necessary instructions, screws, keys and installation templates and marked with item number corresponding to number shown on Contractor's hardware schedule. Clearly mark each package to indicate the contents and the door opening or place of installation.

1.05 CODES AND STANDARDS

- A. Comply, regardless of conflict with specifications and/or drawings, with all current codes and requirements of the Underwriters' Laboratory and with handicapped access requirements. Bring all conflicts to the attention of the Architect.

1.06 SUBSTITUTIONS

- A. Submit samples of substitute hardware items by manufacturers not listed under the specific item, showing finish and style to the Architect for approval.

1.07 GUARANTEES

- A. Provide written guarantee for a period of 2 years.

PART 2 - PRODUCTS

2.01 MAKE OF HARDWARE

- A. Items and numbers of hardware hereinafter scheduled have been taken from the catalogs of the following manufacturers unless otherwise indicated. Equal products of listed approved manufacturers are acceptable. Wherever possible manufacture shall match existing hardware on site.

Listed Item	Manufacturer	Alternate Manufacturer
Hinges	Stanley	McKinney, Hager
Locks	Schlage	Falcon, Sargent
	Best	No substitutions
Padlocks	Schlage	Russwin, Sargent
Exit Devices	Von Duprin	Sargent, Adams-Rite
Closers	LCN	Rixson
Pulls	Quality	Builders Brass, Colonial Bronze
Overhead stop/hold	LCN	Approved equal
Coordinators	Glynn-Johnson	Approved equal
Stop/holders	Quality	Approved equal
Flush bolts	Glynn-Johnson	Approved equal
Bolts	Quality	Ives, Hager
Kickplates	Quality	Builders Brass, Colonial Bronze
Threshold/Weather.	Pemko	Zero, Reese
Mutes	Glynn-Johnson	Approved equal
Lock Protector	Glynn-Johnson	Approved equal
Signage	Mohawk	Vomar, ASI

2.02 PRODUCTS

- A. Hinges: Three or five knuckle, stainless steel non rising pins, concealed bearings, flush tips and pins. Steel plated hinges on interior doors, stainless steel or plated non ferrous hinges on exterior doors and where stainless steel locksets are used. Non removable pins on exterior outswinging doors or where scheduled.
- B. Locksets: Mortise type, lever handle.
- C. Padlocks: Brass body, chain for attachment to frame of gate or hatch. Keyed to fit into Owner's keying system.
- D. Closers: Surface mounted type. Cast iron body. Case sprayed to match other door hardware. Custom color if scheduled.
- E. Kickplates: Plated brass or stainless steel depending on finish required.
- F. Coordinators to include filler bars so that they extend entire length of top stop.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General:
1. Fit hardware accurately to doors and frames and adjust to operate smoothly and without sticking and binding. All hand-actuated hardware is to be mounted between 30 and 44 inches above the floor. Following dimensions are from the bottom of the frame:
 2. Locks and latches: 40-5/16 inches to centerline of the strike which is higher than or equal to the centerline of the lever.
 3. Push plates: 42 inches to centerline.
 4. Pulls and plates: 42 inches to centerline.
 5. Combination pull/push bar: 42 inches to centerline.
 6. Panic hardware: 40-5/16 inches to centerline of strike which is higher than or equal to the centerline of the push bar.
 7. Remove all hardware, except prime coat butts, for painting and reinstall and adjust after painting is completed and accepted.
 8. Adjust closers to properly control closing and latch speed.
 9. Lubricate hardware in accordance with manufacturer's instructions where so required.
 10. Drill and tap on the job as required for proper installation of surface applied hardware.
 11. Replace all screws that have been stripped.
- B. Exit Doors: All exit doors shall always be operable from the inside without the use of a key, special knowledge, or effort, by turning a lever handle or pressing a bar. Verify acceptability with the local fire marshal.
- C. Lock Hand: Hand of lock shall be as indicated on the drawings. If door hand is changed during construction, make necessary changes in hardware at no additional cost to Owner.
- D. Fastenings: Finish hardware shall be furnished with all necessary screws, bolts, or other fastenings of suitable size and type to anchor the hardware in position for heavy use and long life, and shall harmonize with the hardware as to materials and finish. These fastenings shall be furnished where necessary with expansion shields, sex bolts, toggle bolts, or other approved anchors according to the material to which it is applied and as recommended by the manufacturer. All hardware fastened to concrete shall be furnished with machine screws and wedge or expansion anchors.
- E. Template Hardware: All hardware applied to metal doors or jambs shall be made to template and secured by machine screws. Furnish templates to metal frame manufacturer for application at the factory, unless otherwise requested.
- F. Finish hardware must be neatly and properly installed in accordance

with the best practices as approved by the manufacturer. All hardware must be thoroughly cleaned when it is turned over to the Owner.

- G. Door Position: The position of doors as shown on the drawings does not necessarily indicate the extent of door swing. The doors should swing 180 degrees or as far as is possible, but not less than 90 degrees.
- H. Hinges:
1. Provide hinge widths sufficient for doors to clear trim or wall projections.
 2. Locate top hinge five inches from top of door; bottom hinge ten inches from finish floor. Space third hinge equally between top and bottom hinges. Fourth hinge to be located just below top hinge with allowance for removal of pin. On very tall, but not wide, doors space all hinges equally.
 3. Doors 2'-6" and less in width to have 2 hinges. Doors 2'-7" to 3'-0 to have 3 hinges. Doors 3'-1" to 4'-0 to have 4 hinges. In addition to these hinges, add one additional hinge for each 30 inches or fraction thereof that the height of the door exceeds 90 inches.
 4. Install with phillips head steel screws plated to match hinges except that non-ferrous hinges are to be installed with non-ferrous screws.
- I. Lock Strikes: Provide boxed lock strikes with curved lip of sufficient length to protect trim and/or jamb and so shaped to avoid tearing clothing. Strikes for double doors to have protected backs with integral stop.
- J. Keying:
1. Key all doors to same room alike.
 2. Lock supplier shall work directly with the Owner to establish the keying schedule. Keying to be approved by Owner before ordering.
 3. All locks shall be master keyed. All keying shall be as directed by the Owner. Furnish four (4) keys per lock. Furnish eight (8) master keys for master key set.
 4. All keying shall be done by the lock manufacturer. All locks to be construction master keyed. Stamp all keys "Do Not Duplicate."
 5. All keys shall be properly tagged by the contractor and turned over to the Owner upon completion of the work.
- K. Padlocks: Install at each Roof Hatch, chain link gate and as indicated.
- L. Closers:
1. Attach closers by means of sex bolts.
 2. Provide mortised shoes and special mounting brackets as required.
 3. Adjust closers for the minimum opening force necessary to assure that the door and hardware will operate and latch properly, however, the maximum opening force throughout the first 90° may not exceed:
 - a. 5 pounds for interior non-rated doors.

- b. 8 pounds for exterior doors.
- c. 15 pounds for fire rated doors.
- 4. Closing speed: From an open position of 70° the door shall take at least 3 seconds to swing to a position 3 inches from the latch as measured to the leading edge of the door.
- M. Floor Stops: Floor stops should not interfere with traffic and should be placed as close to obstructions or walls as possible. Carpet risers (R-1) as required. Exterior stops are to be sized to required height with risers to match finish of stop.
- N. Kick and Push Plates: Shall be height indicated by door width less 2". Install on push side of door. Plates shall be drilled and countersunk at 6 inches on center for #6 plated Phillips head, oval head screws.
- O. Door Silencers: Provide three for each single door, four for pairs of doors, as GJ64 or equal.

3.02 HARDWARE LISTING

Read with door schedule on the drawings.

ITEM AND KEY TO DOOR		BHMA	
SCHEDULE	DESCRIPTION	MFG NUMBER	FINISH
<u>HINGES</u>			
H1	Ball bearing, Stainless steel, heavy weight.	CB1961	629
H2	Ball bearing, steel, Self-closing Heavy weight, plated, NRP	CB19__NRP	625
H3	Plain bearing, stainless steel, Heavy weight, double-acting	CB196__	629
H4	By door manufacturer		
<u>LOCKSETS</u>			
	Mortise type "L", 03 lever handle, B rose 2-9/16"f.		
L1	Cylinder only to suit lock	20 or 30 series	
L2	Privacy lock	L9040	
L3	Storeroom lock	L9080	
L4	Entrance lock	L9070	

REPAIR / ADD TO DINING HALL
BUILDING 13330
VANDENBERG AIR FORCE BASE

XUMU #96-1215 B/C

L5 Passage latch L9010

L6 Office lock L9050

Padlocks

Brass body, 6 pin tumbler, 2 inch
clear shackle, 9 inch brass chain 45-102 x 2" 606

EXIT DEVICE 99 Series, add F for FIRE, leave alone for EXIT.

ED1 Rim type, lever handle 99L

ED2 Panelline by door mfg.

ED3 Rim type, no trim - exit only 99EO

CLOSERS 5 year warranty

CL1 Parallel arm, concealed mount,
heavy duty, 120° maximum swing.
For exterior doors only. 2030 Alum

CL2 Parallel arm, push side mount,
heavy duty, 180° maximum swing.
Reduced opening force. Interior doors
only. 2020 Alum

CL3 By door manufacturer, 180° maximum swing. Alum

PULLS

P1 Pull, 8 inches on center. 430A
Pull plate, 4 x 16 inches. 4320A
Push plate, 4 x 16 inches. 2300

P2 "Wire" type, 5/16"f, 3.5" center
to center 812

STOP/HOLDER

S1 Wall bump W307xmounting

S2 Floor stop mount within 4" of wall 119-ES

BOLTS

B1	Automatic flush bolts, metal doors, with coordinator by door mfg.	FB 7 COR-2	USP
B2	Automatic flush bolts, wood doors, with coordinator	FB 8 COR-2	USP

KICKPLATES

K1	Kickplate, 10" high, 1/8" plastic.	48	Color as selected
----	------------------------------------	----	----------------------

THRESHOLD

T1	Flat saddle 1/4" x 6"w	270A	Alum
T2	Half saddle	Corian	
T3	Threshold saddle - hard floor	160A	Alum

WEATHERSTRIP

W1	Rain drip at frame head	346C	Alum
	Rain drip at door bottom	345AV	Alum
	Seal at head and jambs	293CSxS2	Alum
W3	by door manufacturer		
W2	Smoke seal	S88	D

MISCELLANEOUS

M1	Mutes	GJ64	Gray
M2	Key cabinet, 175/16 inch wide x 11 inches high	1200 for 30 keys	

SIGNAGE

S1	HC accessibility logo 6" x 6" Reverse to read from exterior	vinyl inside white mnt. On glass	
S2	"EMERGENCY EXIT ONLY" 2" letters	Acrylic white Letters On black	

REPAIR / ADD TO DINING HALL
BUILDING 13330
VANDENBERG AIR FORCE BASE

XUMU #96-1215 B/C

S3	"WOMEN" California Title 24 handicapped symbol	MCA-VM-3	Per code
S4	"MEN" California Title 24 handicapped symbol	MCA-VM-4	Per code
S5	Text to be determined by Owner Acrylic with vinyl on back set in frame	3" H x length	

END OF SECTION

SECTION 08850

GLASS AND GLAZING

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 07900 - Sealants:
- B. Section 08200 - Pre-glazed Wood Doors:
- C. Section 10800 - Toilet and Bath Accessories: Premanufactured framed mirrors.

1.02 QUALITY ASSURANCE

- A. Delivery and storage of materials:
 - 1. Glass shall be packaged in containers suitable to protect the glass from breakage.
 - 2. Manufacturer's labels showing strength, grade, thickness, type and quality will be required on each piece of glass. Labels must remain on glass until it has been set and inspected.
- B. Codes and standards
 - 1. All glass types, sizes and installation shall comply with the federal, state, and local building codes and ordinances having jurisdiction over the project. Glass shall be labeled as required by code.
- C. Measurement:
 - 1. The sizes of glass indicated on drawings are approximate only; determine the actual sizes required by measuring frames to receive the glass at the project site, or from guaranteed dimensions provided by the frame supplier. Coordinate dimensions for glass and glass holding surrounds to provide the following minimum clearances:
 - 2. At perimeter edge of glass on all four sides provide clearance equal to glass thickness for single glass and 1/4 to 15/16 inch for insulating glass.
 - 3. The sealer space between face of glass and fixed or applied glazing stops, both indoors and outdoors, shall be not less than 1/16 inch plus glass and sash tolerance, but 1/8" maximum.

1.03 SUBMITTALS

- A. Submit samples of all glare-reducing, textured, and specialty glass to the Architect for approval.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Manufacturer: Pittsburgh Plate Glass Company, Combustion Engineering, Globe Amerada, or approved equal.
- B. Glass types noted on the drawings shall be as described below. Glass descriptions are taken from the Pittsburgh Plate Glass Architectural Glass Products. Texture and wireglass descriptions are taken from Combustion Engineering Glass catalog. Acoustical Glass from Globe Amerada Glass Co. catalog.
 - GL-1: Single strength sheet glass, Clear, 3/32" thick, A-quality.
 - GL-2: Double strength sheet glass, Clear, 1/8" thick, A-quality.
 - GL-3: Clear Plate Glass, Regular Plate, 1/4" thick, commercial quality.
 - GL-4: Bronze Glare-Reducing Plate Glass, Solar Bronze, insulated - 15/16" thick.
 - GL-5: Tempered Safety Glass, Clear float, 1/4" thick.
 - GL-6: Tempered Safety Glass, Solar Bronze, 15/16" thick insulated.
 - GL-7: Spandrel ceramic coated Obscure Glass, 15/16" thick insulated.
 - GL-8: Laminated Safety Glass, solar bronze, 15/16" thick insulated. Solarium manufacturer to provide for prefabricated structure including curved sections. Coordinate with skylight manufacturer for dining room location.
 - GL-9: Obscure Wire Glass, "Misco," 1/4" thick.
 - GL-10: Laminated Glass, Clear, 7/16" thick, coordinate with skylight manufacturer for pavilion location.
- C. Glazing compound for wood and metal sash: A. C. Horn Company's Horn Glazing Compound. Not for snap in stops.
- D. Provide all accessory items such as glazing points, putty, etc., as required.
- E. Sealants are described in section 07900.
- F. Opaque panels:
 - 1. Glasweld by Eternit for smooth flat panels. Install panels back to back if required. Exposed faces shall be smooth. Face concealed in

- construction may be rough.
2. Brake formed anodized aluminum for detailed panels.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Do not set glass in wood frames until rabbets have been primed and priming is dry.
- B. Beginning of installation means acceptance of all substrate.
- C. Clean contact surfaces with solvent and wipe dry.
- D. All glass to be set in putty or glazing compound shall be bedded, back puttied, secured in place, and face puttied. Apply putty uniformly in straight lines, with accurately formed bevels and clean cut corners. Remove excess putty from glass.
- E. Set glass in glazing stops, gaskets, channels, and strips in accordance with the entrance and window manufacturer's specifications.
- F. Glass shelves shall have all exposed edges "Pencil Polished."
- G. Set obscure glass with rough surface inside for easy maintenance.

3.02 PROTECTION AND CLEAN-UP

- A. Protect all glass prior to, during, and after installation from cracking, chipping, marring, and/or damage in any form.
- B. Remove glazing material from finished surfaces including all labels after inspection has been made
- C. Remove all crates, containers, broken glass, and other debris from the site as it accumulates.
- D. Contractor shall guarantee work covered by this section against all defects in material and workmanship for a period of not less than two years.

END OF SECTION